

### **Abstract of the Disclosure**

Disclosed methods can be used to detect the existence and location of a fault in a structure such as a building or house. Such fault can be due to damage or deterioration to structure elements, or can be due to improper use, design, or assembly, for example.

- 5 The methods use optical sensing to detect vibration from a structure. The sensed vibration is highly dependent upon the condition of the structure elements, so that the existence and location of a fault in the structure can be readily detected.

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